

Abstract of the Disclosure

The electrical contacts, such as ball grid array (BGA) solder balls, of an integrated circuit are coupled to printed circuit board (PCB) bonding pads that include vias. [A method for fabricating an electronic assembly utilizes at least one operation in which a thermally expansive substance, such as a volatile organic compound (VOC), is applied to the PCB. Some of the VOC goes into the via channels. The electrical contacts of a surface mount technology component such as a ball grid array (BGA) solder ball component are affixed to the bonding pads using a reflow soldering technique.] According to one embodiment of an electronic assembly, the vias are formed off-center, so as to inhibit bridging between adjacent solder balls during a solder reflow operation by minimizing the effect of solder ball ballooning resulting from outgassing of a thermally expansive substance, such as a volatile organic compound [the] (VOC) from the via channels. A substrate and an electronic system are also described.

IN THE CLAIMS

Please substitute the claim set in the appendix entitled Clean Version of Pending Claims for the previously pending claim set. The substitute claim set is intended to reflect cancellation of claim 26; amendment of previously pending claims 18, 21, and 27-28; and addition of new claims 31-36.

The specific amendments to individual claims are detailed in the following marked up set of claims.

New claims 31-36 are also set forth.

18. (Amended) A substrate comprising:

a plurality of lands, each land having a geometric center, wherein each land has a via therein that is offset with respect to the geometric center of the land; and

a plurality of solder balls, each solder ball adhering to a respective one of the lands, each solder ball adhering to the entire respective land.